

is then selected using speech recognition. Hutchins does not describe or suggest generating possible pronunciations of a word using its spelling or selecting the best pronunciation using speech recognition.

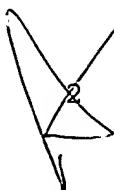
Hutchins is primarily concerned with a method for speech recognition. The method is based on SubSyllable "spellings." Hutchins defines a SubSyllable as "a cohesive segment of the acoustic signal that is generally smaller than a phoneme" (col. 5, lines 23-25).

In Hutchins, to recognize incoming speech, the speech is digitized and the digitized speech is broken into SubSyllables. As described at col. 13, lines 46-67:

[A] series of modules analyze the digital signal for acoustic attributes. Based on these changing attributes, the first stage 16 of the recognizer 10 divides the speech into cohesive segments, which generally correspond to temporally stable configurations of the vocal tract and to the transition interval between such stable configurations. Thus, the results of the analysis place each segment of speech into one of four categories of gross approximations:

1. Silence
2. Fricative
3. Vowel
4. Change interval

These four gross categories are further distinguished by the duration of silence, the strength or weakness of a fricative, the articulatory quality of a vowel, or the rising or falling amplitude of a change interval. Once a segment has been analyzed to this finer level of detail, a symbol or set of symbols, reflecting both gross and fine qualities, is assigned to the segment. An individual symbols or set of symbols constitutes the "spelling" of a SubSyllable.



The resulting "spelling" of a SubSyllable is a phonetic spelling based on symbology conventional in linguistics (see, e.g., col. 14, lines 5-22).

Hutchins achieves recognition from a string of SubSyllables by comparing the string of SubSyllables "to a SubSyllable Grammar 24, which contains tables of predetermined 'spellings' of words or parts of words.... If a sequence of SubSyllable spellings from successive frames matches a spelling in the table, recognition is achieved" (col. 14, lines 43-52).

Hutchins describes adding words to a vocabulary by writing SubSyllable spellings to describe them (see col. 24, line 50 to col. 27, line 16). For example, Hutchins states:

There are two steps in writing SubSyllable spellings for a new word: first, breaking the word into its major physical components, and second, determining the possible variations of each component. The preferred major physical components are these "milestones" in the word: fricatives (especially unvoiced), stops, nasals, and vowel segments.

Col. 26, lines 23-29. However, Hutchins does not describe or suggest adding a word using a spelling and an utterance of the word.

In rejecting claims 1 and 7, the Examiner has referred to Fig. 4a of Hutchins, as well as sections of columns 9, 15, and 16. These sections are directed to Hutchins' method of speech recognition and are not directed to adding a word to a speech recognition vocabulary. The Examiner is improperly combining these sections of Hutchins with the section (starting at column 24) that does relate to adding words to a vocabulary.

Hutchins' method of adding a word to a vocabulary does not include receiving a spelling of the word and an utterance of the word. Nor does Hutchins use speech recognition to find the pronunciation of the spelled word that best matches the uttered word, as recited in claims 1 and 7. Rather, Hutchins indicates that a programmer merely assigns possible phonetic representations (the SubSyllable "spellings") to a "major physical component" of a word from phonetic symbology conventional in linguistics.

Therefore, applicants submit that claims 1 and 7, and the claims dependent thereon, are patentable over Hutchins for at least these reasons.

Claim 8

Claim 8 is directed to assigning a pre-filtering class to a word by matching first two letters of the word to classified words starting with the same two letters to form a sub-list of classified words, matching phonemes of the word to phonemes of the classified words in the sub-list to form a class list, and placing the word in the class list.

Applicants request reconsideration and withdrawal of the rejection because Hutchins does not describe or suggest assigning a pre-filtering class to a word and, in particular, does not describe or suggest matching the first two letters of a word with classified words and matching phonemes of the word with classified words, as recited in claim 8.

As the basis of the rejection, the Examiner refers to various sections of Hutchins which deal with Hutchins' method of speech recognition. These sections of Hutchins are not related to assigning a pre-filtering class to a word by matching aspects of the word to aspects of words that have already been classified, as recited in claim 8.

Therefore, applicants submit that claim 8, and the claims dependent thereon, are patentable over Hutchins for at least these reasons.

Claim 10

Claim 10 is directed to assigning a pre-filtering class to a word by performing a direct look-up of a first phoneme of the word in a database of classified words organized alphabetically by their phonemes, matching the first phoneme of the word to a first word in the database having the same first phoneme, selecting the first word in the database having the same first phoneme and following words in the database to form a sub-list, matching the first phoneme of the word to the first phoneme of the classified words in the sub-list to form a class list, and placing the word in the class list.

Applicants request reconsideration and withdrawal of the rejection because Hutchins does not describe or suggest assigning a pre-filtering class to a word and, in particular, does not describe or suggest matching the first phoneme of the word to words in a database having the same first phoneme, as recited by claim 10.

As the basis of the rejection, the Examiner refers to various sections of Hutchins which deal with Hutchins' method of speech recognition discussed above. These sections of Hutchins are not related to assigning a pre-filtering class to a word by matching aspects of the word to aspects of words that have already been classified, as recited in claim 10.

Therefore, applicants submit that claim 10, and the claims dependent thereon, are patentable over Hutchins for at least these reasons.

The Examiner has stated that the incorporation by reference of a publication at page 7, line 17 of the specification is improper. Applicants submit that the subject matter referred to is non-essential as it is included for purposes of indicating the background of the invention or illustrating the state of the art.

Applicant submits that all of the claims are now in condition for allowance, which action is requested. Filed herewith is a Petition for Automatic Extension with the required fee.

Please charge any additional fees, or make any credits,
to Deposit Account No. 06-1050.

Respectfully submitted,

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Phyllis K. Kristal
Reg. No. 38,524

Fish & Richardson P.C.
225 Franklin Street
Boston, MA 02110-2804

Telephone: 617/542-5070
Facsimile: 617/542-8906
319517.B11